Landing Craft Air Cushion Vehicle Navigator Selection System

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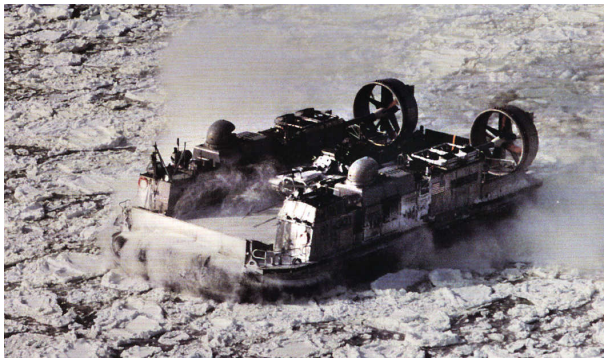
The Landing Craft Air Cushion (LCAC) vehicle is a hovercraft with control features for three axes of rotation, similar to those of a helicopter. The LCAC was specifically designed to transport weapons, equipment, and combat-ready personnel from ship to shore. Its future missions may include medical evacuations in wartime operations, non-combatant evacuations, and lane clearing during amphibious landings.



The LCAC crew consists of five positions manned by enlisted personnel: loadmaster, deckmaster, craftmaster, engineer, and navigator. The craftmaster is responsible for the actual control of the LCAC vehicle. The engineer monitors engine performance and limitations and relays the information to the craftmaster. The navigator is responsible for maintaining and monitoring navigation equipment, as well as plotting courses and planning for collision avoidance.

During the middle to late 1980s, the LCAC operator and engineer communities experienced training attrition rates of 40-60%. The Naval Aerospace Medical Research Laboratory was tasked by the Naval Sea Systems Command to develop a selection system to reduce this rate. The system was completed and transitioned in 1992 to the Naval Operational Medicine Institute. Attrition rates have ranged between 10-20% since that time.

Similar attrition problems in the navigator community led to an additional tasking for the development of a unique selection system for the navigator position. A task analysis of navigator training was completed, and a computer-based selection system was developed and validated using navigators from the East and West Coast Assault Craft Units. Preliminary screening of personnel began in 1996. The final system and predictive models are in development, and a full transition product will be delivered in 1998.